ASTORIA DOWNTOWN BELOW-GRADE RETAINING WALL

Astoria, Oregon's downtown was nominated as a historic district by the National Register of Historic Places in 1998. The Astoria Bottling Works, located on the NE corner of Marine Drive and 9th Street, was designated as a historic landmark within the district. The Sunset Empire Transportation District (SETD) purchased the bottling plant in 2001. The SETD planned to convert the building to an intermodal center where buses, shuttles, trolley and taxis convene. Part of that proposal included filling a below-grade lot to street level.

Astoria's commercial district was constructed over tidal flats. In 1915, Astoria began a campaign to fill its streets with sand, from curb to curb, between concrete retaining walls. In 1922, the entire downtown was destroyed by fire. In 1923, a second system of retaining walls, called "chairwalls" or "step-down walls," were used.

The block between Marine Drive and Astor Street and 9th and 10th Street (where the Astoria Bottling Works is located) is representative of the 1915 attempt to raise and fill streets. The below-grade lot remains at the original, tidal flat grade. Before filling the site, the SETD worked with the City of Astoria to nominate several examples of the 1915 and 1923 retaining walls as "Contributing" features within the historic district. The SETD also photo-documented the site to Historic American Building Survey standards.

Enclosed you will find the following:

* An amendment to the Astoria Downtown Historic District nomination to the National Register of Historic Places. The amendment includes two examples of the 1915 retaining wall and two examples of the 1923 "chairwall." (20 pages)

* A copy of "Great City Rising," a newspaper column from *The Daily Astorian*, July 27, 2001,entitled "Building Astoria's foundation was a fiasco." The article recounts the construction of the "chairwall" in 1923. (2 pages)

* A copy of a newspaper article from *The Daily Astorian*, January 18, 2002, entitled "Photographer records history with piece of history." The article describes the photo-documention of the site and retaining wall. (3 pages)

* An index to 14 black and white photographs documenting the site and retaining wall. (1 page)

* 14 black and white photographs documenting the sit and retaining wall.

Astoria Downtown Historic District
Name of Property

Clatsop, Oregon
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- [X] private
- [X] public-local
- [X] public-State
- [X] public-Federal

Category of Property
(Check only one box)

- [ ] building(s)
- [X] district
- [ ] site
- [ ] structure
- [ ] object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
59	64	buildings
2		sites
2		structures
		objects
63	64	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

8

6. Function or Use

Historic Functions
(Enter categories from instructions)

Commerce: all
Social: meeting hall, civic
Government: city hall, government office, custom house, post office, courthouse
Recreation and Culture: theater
Industry: manufacturing facility
Health Care: hospital
Domestic: multiple dwelling

Current Functions
(Enter categories from instructions)

Same

7. Description

Architectural Classification
(Enter categories from instructions)

Academic Classicism
Late Nineteenth Century American
Historic Period
Modernistic
Vernacular

Materials
(Enter categories from instructions)

foundation concrete, wood piling
walls reinforced concrete, brick tile, brick
roof built-up, asphalt
other glass, wood, corrugated metal

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

The resource count is being amended with an addition of two structures. Both structures are retaining walls, each at a separate location. One structure is representative of the 1915 attempt to fill Astoria's streets. The other structure is representative of the 1923 attempt to fill Astoria's streets; it is referred to as a "chairwall" or "step-down" wall.

A third site exhibits retaining walls from both 1915 and 1923. Although the walls are considered contributing features of the Astoria Downtown Historic District, their inclusion does not effect the resource count. These retaining walls surround Fort Astoria's Tidal Rock site (R-81), a site previously included in the resource count. The inclusion of the walls are an amendment to the significance of that site.

DESCRIPTION--AMENDMENT

Astoria's downtown was constructed over tideflats. Fill was used to raise the streets above a soggy marsh area. Instead of filling the entire wetland, only the streets were filled. River sand was poured between retaining walls then covered by pavement. Sidewalks bridged the gap between curb and commercial structures. Since filling was confined to the streets, the result was below street-grade lots, still visible in areas without buildings.

Astoria's downtown was filled in two separate and distinct campaigns--each using a different type of retaining wall. The first campaign was in 1915. It concentrated on the southern and western portions of the downtown. The second campaign was in 1923, following the Great Fire of 1922. This effort was confined to the central portion of the commercial district. (Fig. 1)

Streets filled in 1915 had reinforced concrete retaining walls. The walls were not of unusual construction. In profile, these walls were straight up and down--much like that used for the retention of hillsides. Columns and braces were spaced every few feet.

Wood sidewalks were constructed from the curb to the front facade of adjacent buildings. Utilities were buried in the sand fill. Sewer lines were placed in the center of the street and buried as well.

Portions of retaining walls constructed in 1915 are visible from several below street-grade lots. The lots are bounded by street-level sidewalks now supported by concrete piers.[1] The retaining walls may be seen at the following locations: On the SE corner of Astor Street and 7th Street; nearly an entire block bounded by Astor Street, Marine Drive, 9th and 10th Streets; the SE corner of Marine Drive and 9th Street; the NW corner of Duane Street and 10th Street; the south side of Exchange Street between 11th and 12th Streets; the north side of Exchange Street between 12th and 13th Streets; and 15th Street on the SW corner of Commercial Street.

[1] The wood sidewalks were converted to concrete in 1923.

The below street-grade lot bounded by Astor Street, Marine Drive, 9th and 10th Streets is scheduled to be filled for use by the Sunset Empire Transportation District as an Intermodal Center.

The City of Astoria is nominating two of the above locations for inclusion as Contributing Historic Resources within the Astoria Downtown National Register Historic District.[2] Both are adjacent to public property. They include the north side of Exchange Street as it wraps from 12th to 13th Street (tax lot 2100, lots 6 and 7, block 66 in the McClure's Addition) and 15th Street on the SW corner of Commercial (tax lot 6300, lot 1, block 135 Shively's Addition).[3]

In 1922, Astoria's commercial district was destroyed by fire. In 1923, the wooden street system which previously ran through the downtown core was reconstructed using sand fill between reinforced concrete retaining walls--expanding the work which began in 1915. A newly designed structural system, called "chairwall" or "step-down wall," was used in this later phase of street construction.

Like the earlier retaining walls, the chairwall enabled streets to be raised well above the former tide flats and allowed enough head room for basements in adjacent businesses. It was fire resistant too, perhaps the most fire-resistant system available to Astoria at the time. Not only was it formed of concrete, but the fill made an effective block which slowed the spread of fire from one block to another.

This system was also ideally suited for a city which was reviving itself from disaster. It was independent of the construction of surrounding commercial buildings. In some cases buildings were constructed before the chairwall, in most cases not. Once the chairwall was built, 10-foot wide concrete sidewalks were constructed on concrete joists

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[2] Astoria's historic properties ordinance will recognize these resources as "Primary" landmarks.

[3] This site was previously designated as historic during the nomination of Astoria's downtown to the National Register. It is known as the historic Tidal Rock site.

and piers. Again, in some cases, those walks abutted existing building facades, in most cases the walks extended to where buildings would soon be constructed.

The chairwall system got its name from its chair-like shape. (see Fig. 2) The walls are, in cross-section, like the letter "h." Rows of piling were driven along the curb lines. Reinforced concrete walls were built upon these. The curb is located at the top of the wall, while the lower, wider section gives increased stability and provides a unique tunnel system. (see Fig. 3) This tunnel was particularly attractive to Astorians in 1922, because it allowed utilities--including flammable gas lines--to be buried yet remain easily accessible for maintenance. The void beneath sidewalks, left between the walls of basements and the chairwall, is still frequently used by utility workers to access the chairwall system.

As in 1915, sewers were placed in the middle of the street. However, concrete tunnels surround the sewer lines. When the walls were completed and the sewer lines were in place, the streets were filled with river sand, totally submerging the chairwall system. Concrete, approximately 7" thick, was then poured over the sand for a street surface.

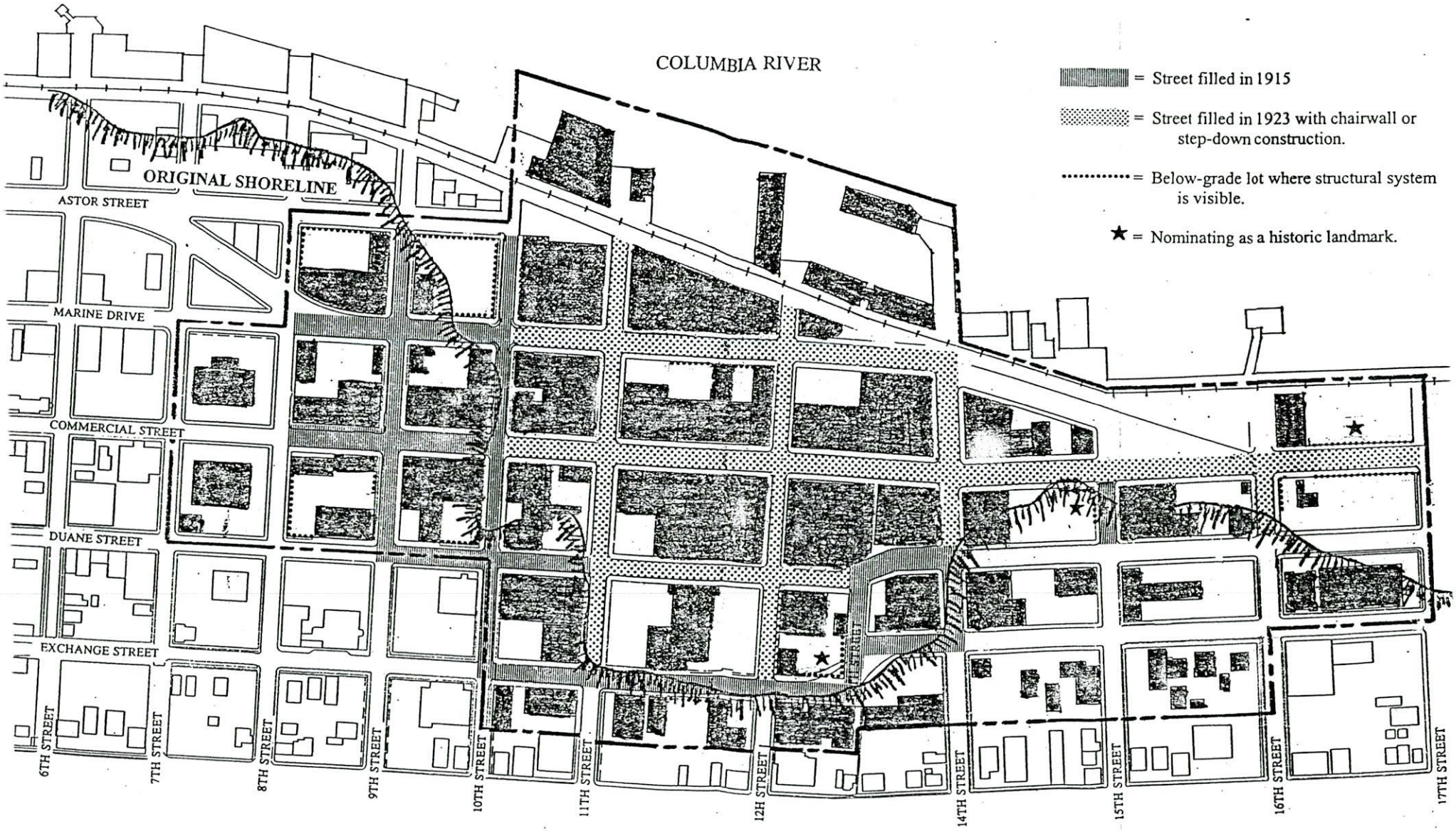
Several portions of the chairwall are visible today from below street-grade lots near Marine Drive and Commercial Street. The lots are bounded by street-level sidewalks now supported by concrete piers. The chairwall is exposed at the following locations: in two sections on the south side of Marine Drive between 11th and 12th Streets, on the north and south side of Marine Drive between 16th and 17th Streets, on Commercial Street at the SW corner of 15th Street and on east side of 16th Street between Duane Street and Marine Drive (a small section is visible on the west side as well).

The City of Astoria is nominating two chairwall locations for inclusion as Contributing Historic Resources resources within the Astoria Downtown National Register Historic District.[4] Both areas expose the chairwall's tunnel system and are adjacent to public property. The areas are as follows: Commercial on the SW corner of 15th Street (tax lot

[4] Astoria's historic properties ordinancewill recognize these resources as "Primary" and "Secondary" landmarks.

6300, lot 1, block 135)[5] and the north side of Marine Drive between 16th and 17th Streets (tax lots 800 and 900--no lot or block). Both sites are within Shively's Addition.

[5] This site was previously designated historic during the nomination of Astoria's downtown to the National Register. It is known as the historic Tidal Rock Site. This site was also designated above for representing a portion of retaining wall constructed during 1915.



ASTORIA DOWNTOWN HISTORIC DISTRICT

Fig. 1

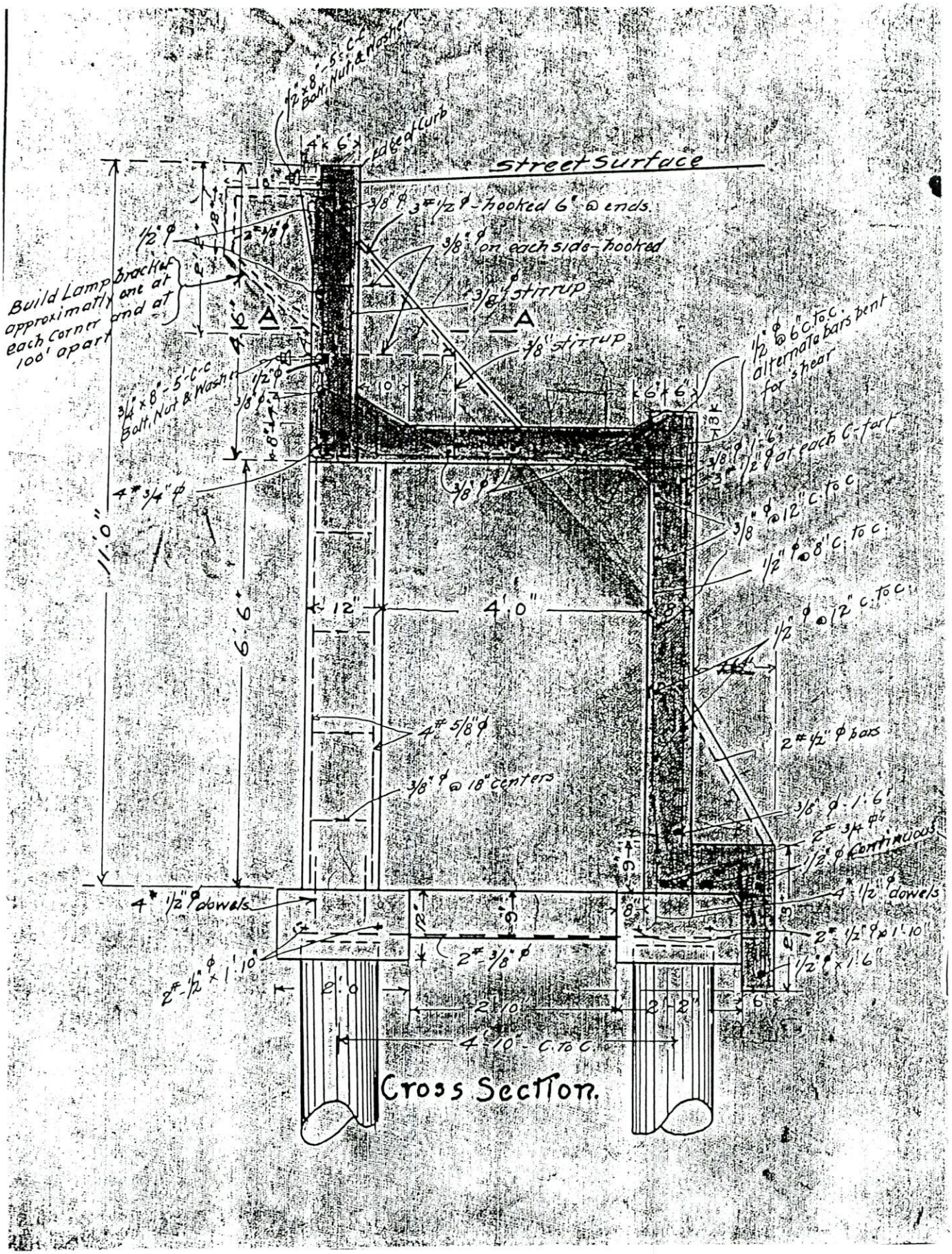


Fig. 2 Cross section of Chairwall or Step-down construction system as designed by Taggard Aston in 1923.

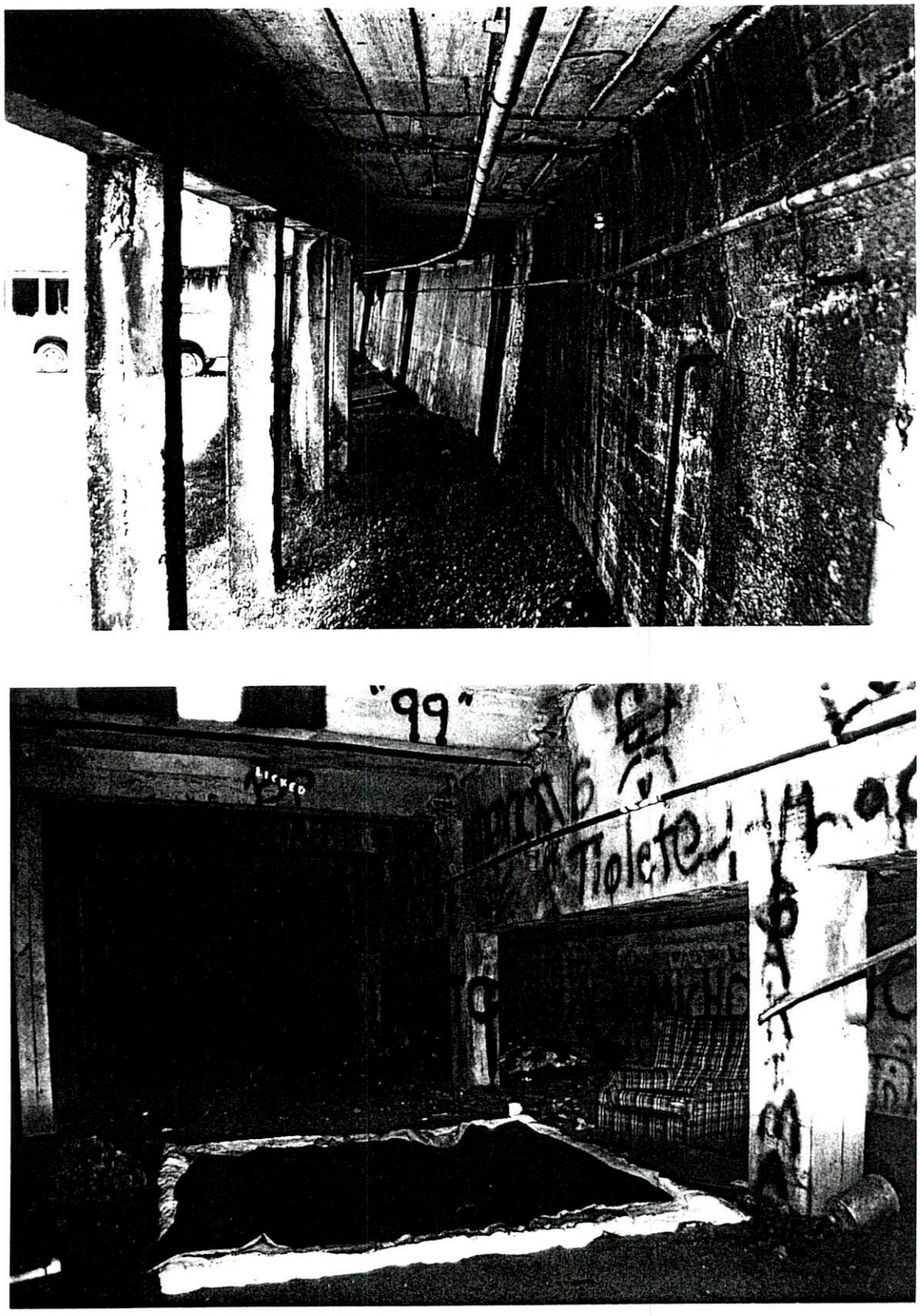


Fig. 3 A hollow space remains visible beneath the sidewalks of some areas filled in 1915. (Top) The chairwall or step-down system was constructed in 1923. Though below street-grade, some areas remain accessible. The low tunnel to the right is actually beneath the street. It is this space that gives the structural system a chair-like appearance in profile. (Bottom)

SIGNIFICANCE--AMENDMENT

The chairwall is an unusual structural system used through much of the Astoria Downtown Historic District. The system had a direct effect on the development and reconstruction of the city after the Great Fire of 1922. Earlier attempts at filling the street also left their mark on the historic streetscape.

The filling of Astoria's downtown streets began in 1915. It was one piece of a huge civic "reclamation" project--a time when tide flats were "reclaimed" for commercial purposes. During this modernization period, the entire downtown was raised by four-feet. This allowed buildings to have basements with headroom. It also removed the buildings that much farther away from a damp, sandy, base.

A bulkhead was also constructed the length of the city along the river's edge. The immediate result was that tide water was blocked from Astoria's commercial area. Lack of tides allowed the streets to be filled. The first area to be filled formed an L-shape around the south and west edges of downtown: from 8th to 10th Street and from Astor to Duane Street, then Exchange Street from 10th through 14th Street and Duane Street from 13th to 14th Streets.

Reinforced concrete retaining walls were constructed along curb lines. Sewer lines were located in the center. Electrical and gas lines were submerged in the sand fill. It has been claimed that Astoria was the first city in the nation to install underground utilities. Perhaps it is safer to say that Astoria was the first town of its size to bury utilities so extensively throughout its central business district.

In 1916, the City considered proposals to bury power lines. Representatives from Pacific Power & Light Co. indicated this had been accomplished in other cities, but with larger populations. They encouraged less burial rather than more, claiming it would be cost prohibitive for a town the size of Astoria to bury wires beyond the commercial district.

Besides lack of power lines in the downtown, the cityscape was directly affected by the fact that only the streets--not the building lots--were raised. Sidewalks were supported on piers which bridged the gap between the curb and building facade. Neither the retaining walls or undersides of the sidewalk were ever meant to be visible. It was always intended that buildings would obscure them. Yet today, a number of lots remain empty. Both the retaining walls and sidewalk supports remain visible from these below street-grade lots.

The second phase of modernization came after the the Great Fire of 1922. The area most profoundly affected by the second phase was bound from the east side of 10th Street to the west side of 17th Street and from the south side of the railroad right-of-way to the north side of Exchange Street between 10th and 12th Streets, then the north side of Duane Street between 13th and 17th Streets.

Even though concrete retaining walls had been used in Astoria six years earlier, it was not a foregone conclusion that they would be.extended. The first debate was whether or not to rebuild Astoria on a viaduct system or continue the fill. The second, simultaneous debate, was whether to rebuild in wood or concrete. Astoria had plentiful lumber. It was thought the street system could be rebuilt less expensively in wood than concrete.

The chairwall, or step-down, system was chosen because of its convenience to lay and maintain utilities, its resistance to fires and its protection from gas line explosions. A concrete system was chosen, not because it was initially less expensive, but because it was resistant to rot and would require less maintenance in the future. Some property owners also believed their fire insurance would be lower if the system were constructed of concrete.

Interestingly, the use of concrete sidewalks was an after thought. Citizens were used to wooden walks. It was not until bids for construction of the chairwall were let that citizens eschewed wood for concrete walks.

The street system within the central core of downtown was reconstructed in three phases. The first phase was the construction of the chairwall by the John Slotte Co. The second phase was the filling of the streets by Jack Gilpin Construction Co. The third phase was the pouring of streets and sidewalks by Soleim & Gustafson.

The reconstruction of Astoria was accomplished through dogged tenacity. The only part which was accomplished with relative ease was the pouring of streets and sidewalks. The chairwall and subsequent filling were trying at best. Slotte, for instance, quickly fell behind schedule. He was at one point, 111 days behind on a 90 day project. Part of his problems stemmed from the stubbornness of some 100 property owners. All refused to deed as much as 7-feet to the City's right-of-way. Wider streets were necessary to accommodate the new, auto-driven society. Without the right-of-way, Slotte could not complete his work. The City had to threaten condemnation of the offending properties before work could proceed.

Filling of the streets became an engineering nightmare. The dredge *Natomah* sluiced a mixture of river water and river sand between the chairwalls. Hydrostatic pressure played havoc on the operation. There were many blow-outs beneath the walls. Within the first three days of filling, 5,000 sandbags were used to stave off huge forces. Later, a wall totally collapsed. Success was reached by cutting the rate of sluicing in half and increasing perforations in both street ends along the waterfront and sewer lines.

Research and inquiries have not yet uncovered any other applications of the chairwall system in the northwest. It is possible the name "chairwall" or "step-down" may be archaic and unrecognizable to engineers today. It is known that the chairwall system was designed and patented by Taggard Aston, consulting engineers of Portland, Oregon. It was designed specifically for waterfront applications. In fact in 1923, Aston hoped to have it adopted for a proposed waterfront improvement in Portland. It is unknown if the system was ever used.

Regardless of its rarity of type, it is an unusual system that was ideally suited for Astoria's topography. When Astoria was first founded, the hillside directly south of present-day downtown was deemed too steep and muddy to develop what would

surely become the New York of the West. It was easier to build a city on wooden pilings than to cut-and-fill the slope.

The chairwall system is a modern adaptation of that city on wooden piers. It met the requirements of a city still chasing grandiose dreams. The chairwalls pulled Astoria out of the 19th century and laid the foundations for a modern 20th century business district.

Furthermore, below street-grade lots which reveal the chairwall and retaining walls, are reminders of Astoria's beginnings. Their presence creates a historic streetscape which is rare if not unique throughout the northwest.

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Astoria Evening Budget, 5-27-15:1, 5-27-15:5, 8-11-16:5, 8-12-16:1, 8-19-16:5, 8-22-16:1, 5-28-23:1, 3-15-23:1, 3-30-23:1, 7-25-23:1, 11-19-23:1, 11-20-23:1, 1-28-24:1, 1-13-24:1, 2-9-24:1, 2-27-24:1, 4-4-24:1

City of Astoria, engineering archives, files #222, #446, #451

PHOTOGRAPHS

Astoria Downtown Historic District--Amendment *
Astoria, Clatsop County
June, 2001
Photographer: John E. Goodenberger
Location of negative: City of Astoria
1095 Duane Street
Astoria, OR 97103

* Unless otherwise noted, this information is the same for all photographs.

Photographs of nominated properties:

1 of 8 — 1200 block, Exchange Street, standing below the sidewalk, an example of retaining wall used in 1915 filling of streets is seen to the left, looking SW.

2 of 8 — 1200 block, Exchange Street, standing below the sidewalk, anexample of retaining wall used in 1915 filling of streets is seen to the right, looking east.

3 of 8 — 1400 block, Commercial Street, the historic Tidal Rock site provides examples of both the retaining wall used in the 1915 filling of streets (on 15th Street to the right) and chairwall construction used in 1923 (on Commercial Street to the left), looking NE.

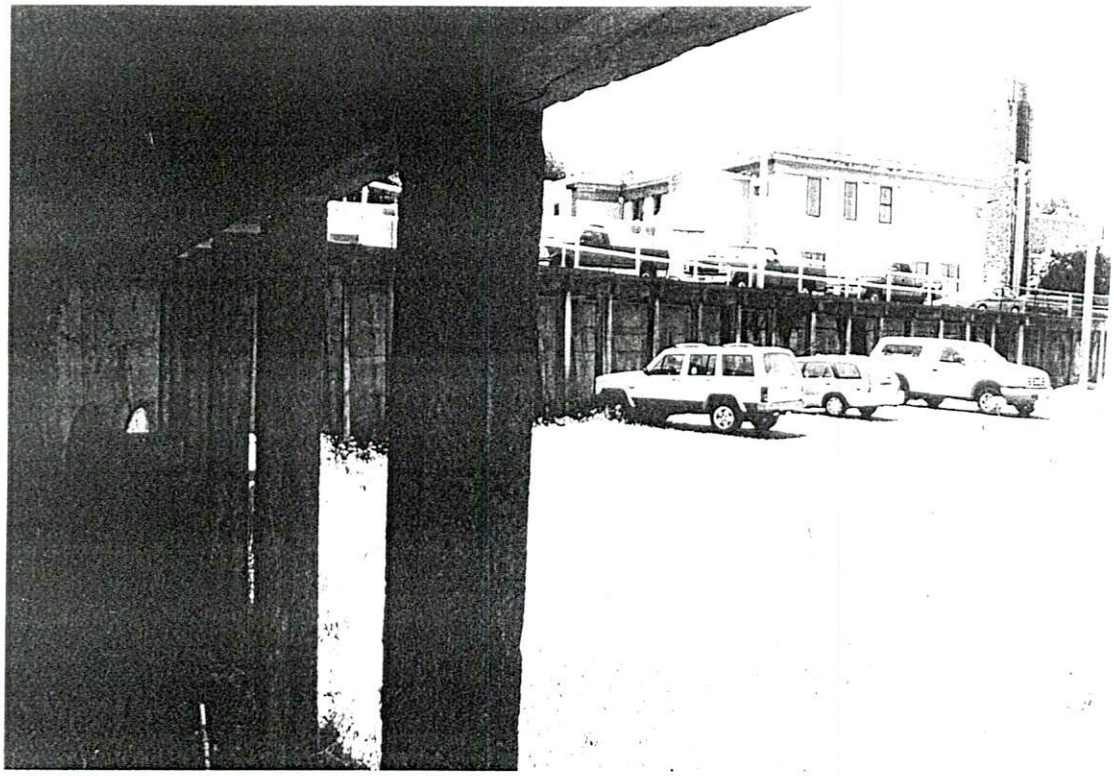
4 of 8 — 1400 block, Commercial Street, chairwall construction is found below the Commercial Street sidewalk at the historic Tidal Rock site, looking east.

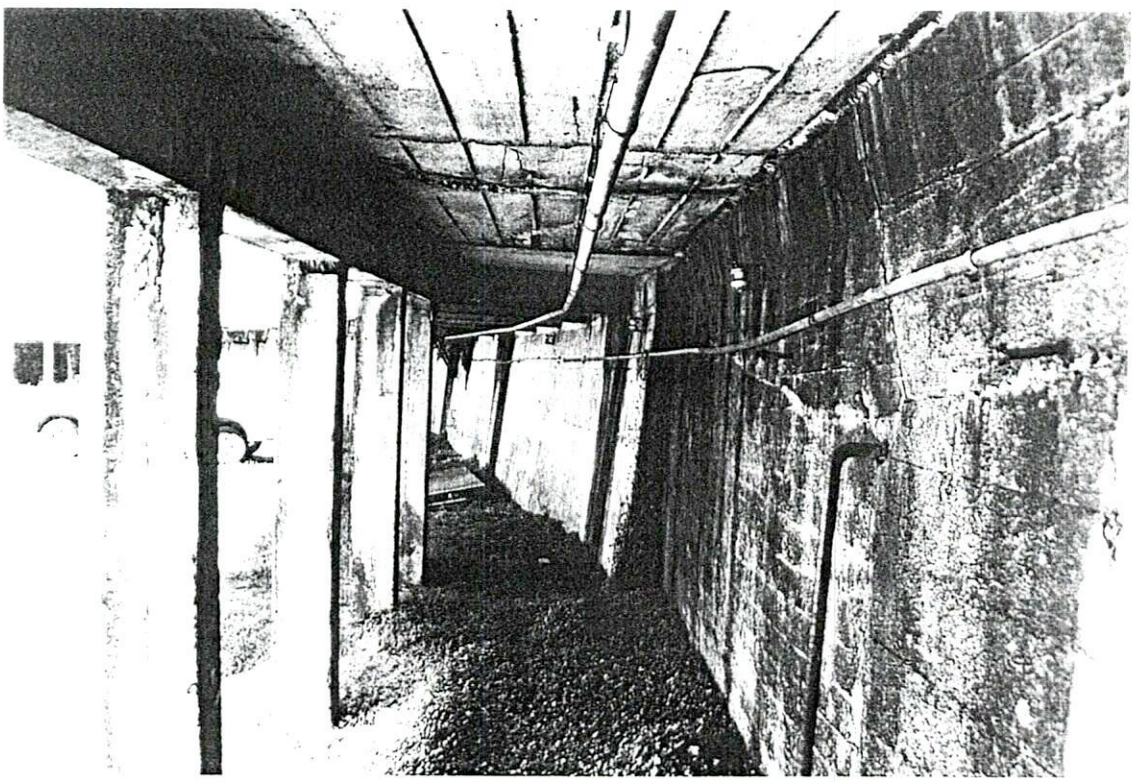
5 of 8 — 1400 block, Commercial Street, chairwall construction at the historic Tidal Rock site, looking north

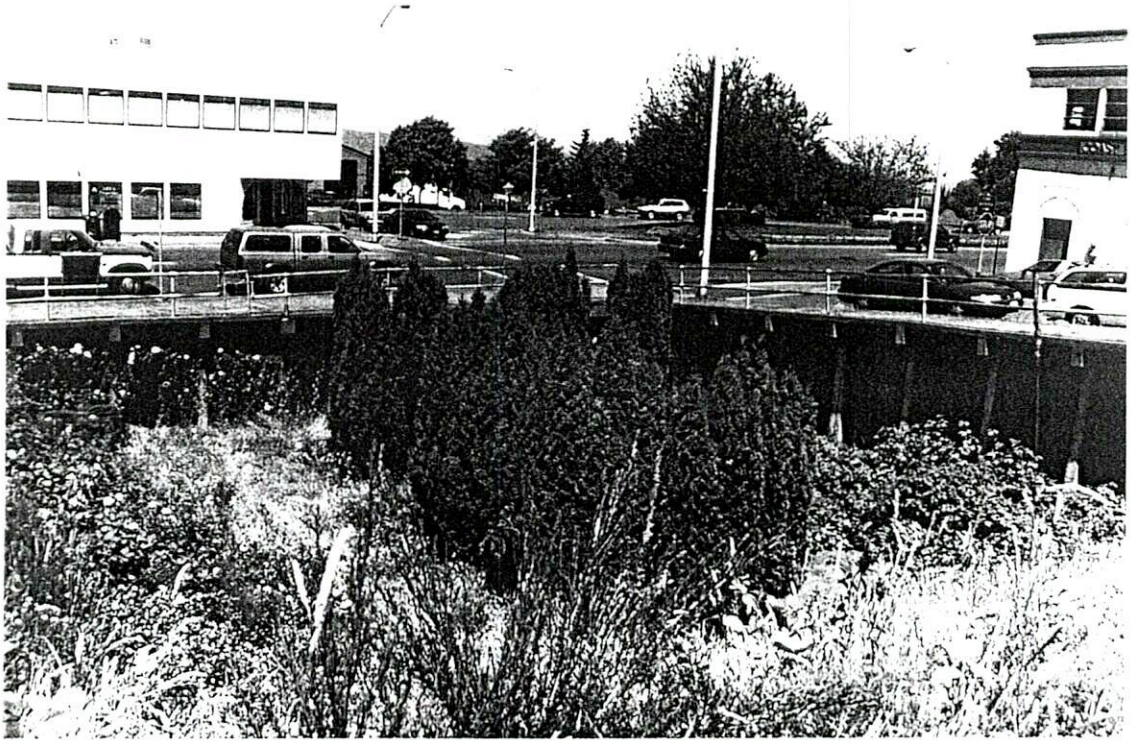
6 of 8 — 1600 block, Marine Drive, nearly a full block of chairwall is visible below sidewalks, looking SW

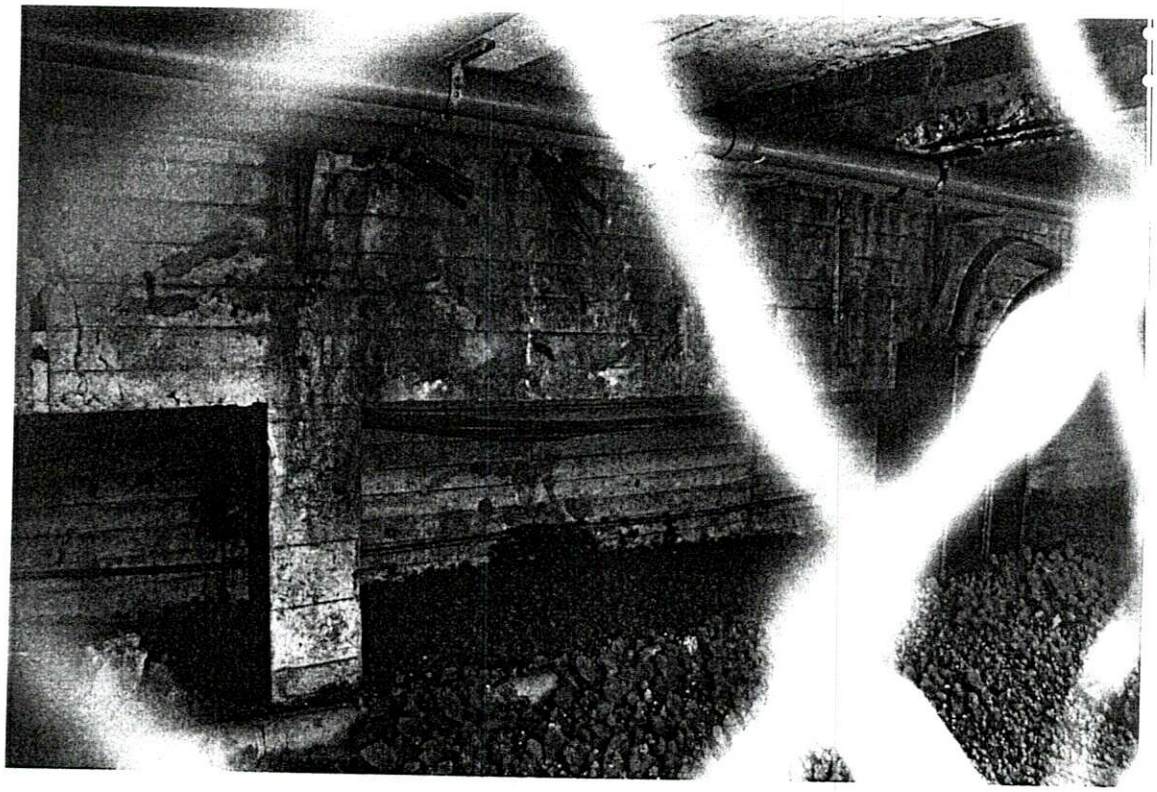
7 of 8 1600 block, Marine Drive, standing below the sidewalk, the chairwall is visible to the right, looking east

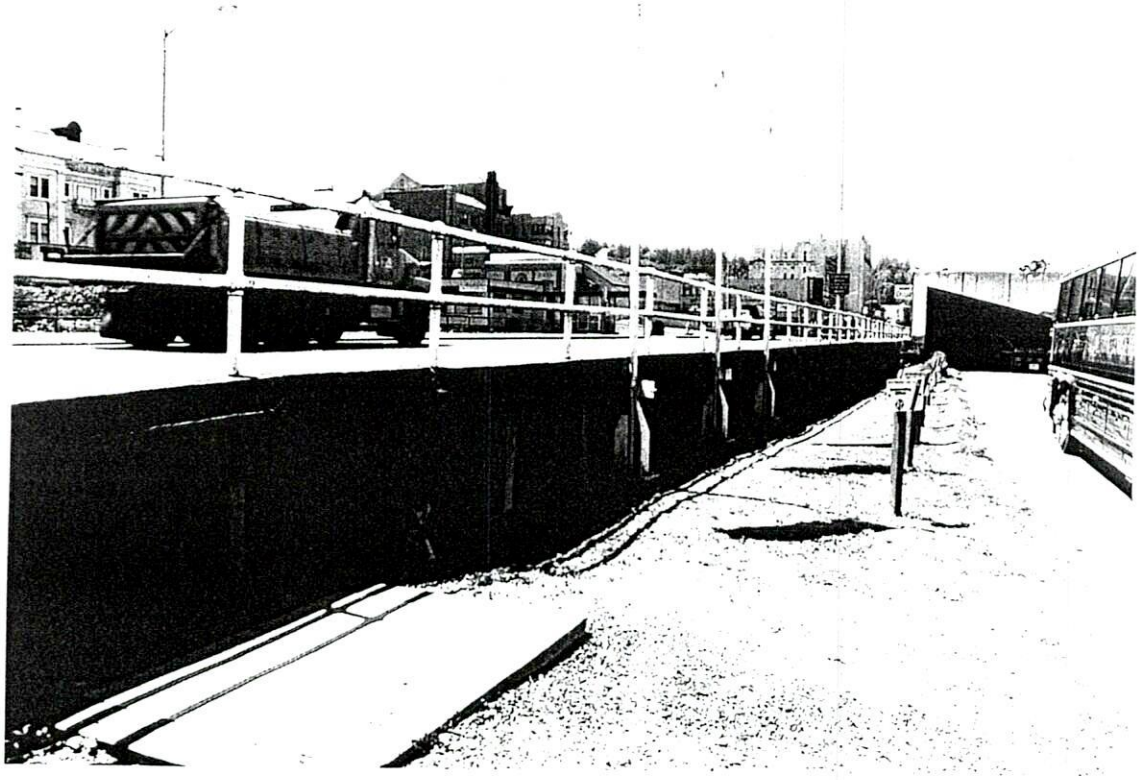
8of 8 1600 block, Marine Drive, standing within chairwall, looking west

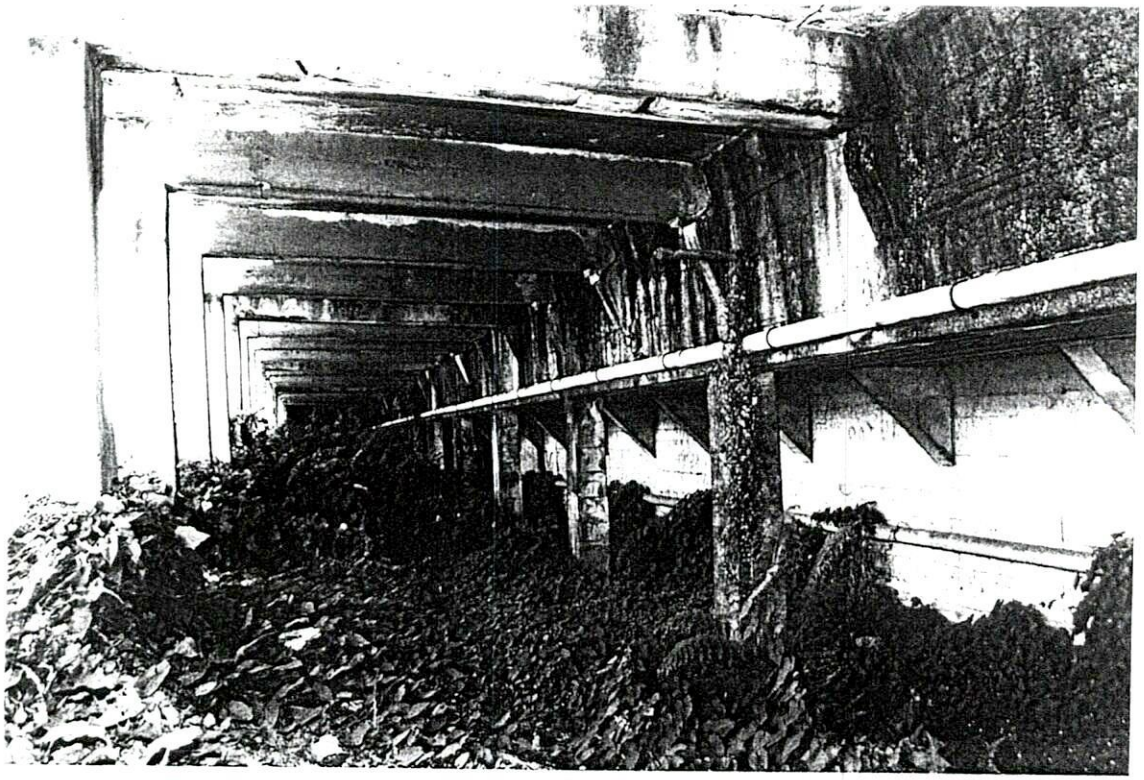


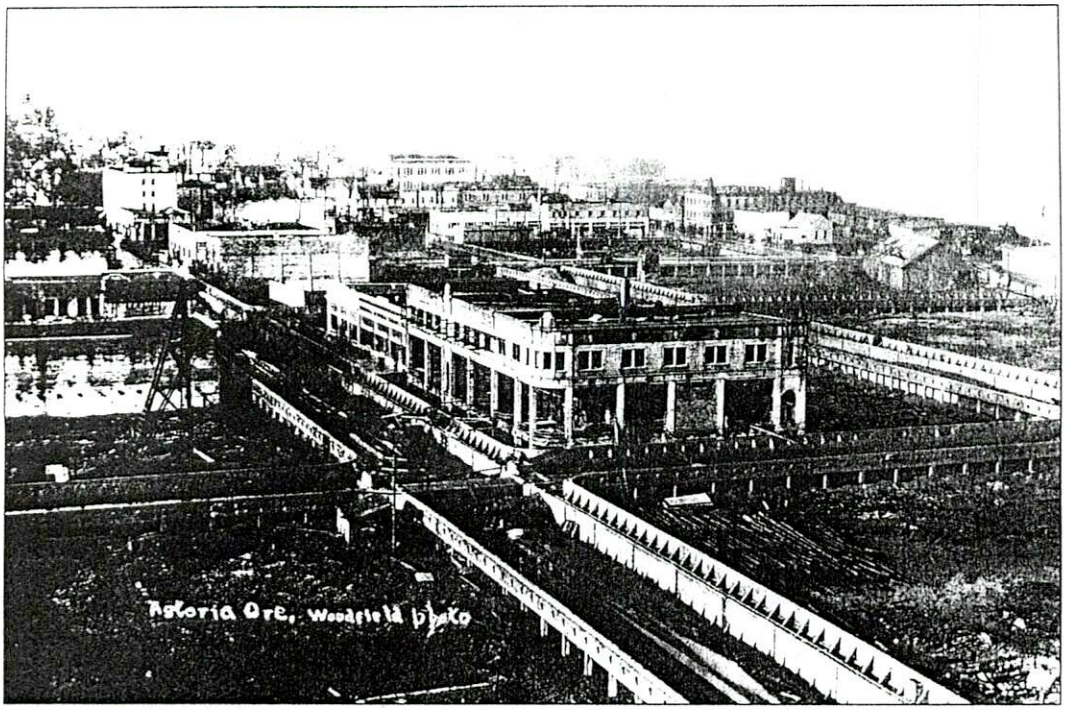












Courtesy of Clatsop County Historical Society

After the Great Fire of 1922, city streets were again raised above former tide flats. Chairwall construction was used to retain sand fill. This 1923 photograph shows 12th and Commercial Streets before they were filled.

Building Astoria's foundation was a fiasco

By JOHN E. GOODENBERGER
For The Daily Astorian

It was Friday April 13, 1923. Mayor O.B. Setters declared a public holiday – a day of Thanksgiving. Hundreds of Astorians said they would travel in a caravan to Portland to thank the Rose City citizens for their financial assistance following the Great Fire of 1922.

The worst was over, or so Astorians thought. Surely our city would soon rise from the ashes. Nothing could slow the reconstruction of the commercial district. Nothing, that is, besides stubborn, penny-pinching citizens and a large force called hydrostatic pressure.

Much vociferous public debate concluded Astoria should invest in a chairwall or step-down wall system for commercial streets. The idea was that a street system could be constructed between sand-filled concrete walls. The street level would be raised well above the former tide flats on which the district was founded. At the wall's base, beneath the street, utilities were located in a concrete tunnel. In profile, the walls are similar to the letter H and also have a chair-like appearance. Sewers were laid in separate tunnels in the center of the street.

This construction system had several advantages. One, it was independent of building construction. Two, the raised streets created headroom for the basements of adjacent buildings. Three, it allowed access to utilities for repair and maintenance. Four, the fill decreased the chance of fire spreading from one block to the next. Five, it buried gas lines, quelling fear of explosions.

It was also expected the chairwall and fill could be completed within 90 days. In late May, the John Slotte Co. was awarded a $282,798 contract for construction of the chairwall. In mid-December, it was announced Slotte was 111 days behind schedule. Slotte's problems stemmed from the stubbornness of some citizens. A month earlier, it was announced some 100 downtown property owners refused to deed as much as 7 feet to the city's right-of-way. Wider streets were necessary to accommodate the new, auto-driven society. Without the right-of-way, Slotte could not complete his work. The city threatened condemnation of the offending properties.

When gunny sacks ran out for sandbags, Astoria Flouring Mill offered wheat sacks.

Meanwhile, the city awarded Jack Gilpin Construction Co. a $91,450 contract for filling sand between the chairwalls. The only way to get sand into the business district was by pumping it with water. Rainfall was low that year. It was feared sluicing would deplete the city's already meager water supply. Instead, Columbia River water was used.

On Jan. 28, 1924, the dredge Natoma began pumping water and sand into the street near 17th and Commercial. Gilpin estimated that alternating 30 minute shifts of filling and rest would allow the sand to settle and the water to drain. After 45 minutes, a great head of water gathered and burst beneath the bulkhead. Half a day went to repair damages. That afternoon, workmen fought to divert the water from a weakening 16th-Street wall only to have it plow a 15-foot deep hole beneath a sewer tunnel on 15th Street.

It was estimated 1,500 sandbags were used to breach the gap. In two days, 5,000 sandbags were used to bolster the defenses. The city's seemingly inexhaustible supply of gunny sacks was exhausted. Junk dealers were called upon to send their wagons to scour the city for more. After much worry, the Astoria Flouring Mill Co. offered 350,000 empty wheat sacks. The sack shortage was solved. At least Gilpin hoped so.

The work of filling the streets evolved into an amazing engineering battle – pitting man against an enormous flood of water. Gilpin's struggle was scrutinized by spectators and hecklers alike. According to the Astoria Evening Budget, Gilpin and his men were, "aided by scores of almost engineers, self-styled hydraulic experts, gentlemen of leisure and just plain bums. The advice given by these allies, who have been considerably on the job since pumping was commenced, is absolutely free."

Within three days there were seven blow-outs. Gilpin perforated the walls at the ends of 14th and 16th streets. The released water was carried in flumes to the river. Large holes were also cut in the sewer tunnels on 14th and 15th streets. On Feb. 1, Gilpin drew a sigh of relief. He had worked 11 hours straight without disaster.

Much to the surprise of everyone, the quality of sand was excellent. When given a chance, it drained water quickly. After one day in place, engineers and "curious amateurs" were able to run and jump on the sand without sinking in.

But Gilpin's reprieve was short-lived. One week later, a wall on Duane Street overturned between 12th and 13th streets. Gilpin fled as fan-shaped cracks spread across the tops of several columns in a slow-motion collapse. Rubble beneath the newly poured wall was determined to be unstable. Sand did not settle evenly throughout the rubble. Instead, pockets of water lodged between bricks, then washed away the sand base.

Someone should have been red-faced. Not 11 months earlier, citizens demanded taxpayer money not be spent on clearing debris. The $10-a-day wages were considered exorbitant and wasteful. During the next three weeks, several more blow-outs occurred. All were blamed on rubble.

Furthermore, work was also slowed by piles of brick left in the middle of the street. To avoid sink holes, Gilpin's crew shot sand through a fire hose, filling cavities in the rubble. The work was extensive. Near the Duane Street collapse, for instance, it later took three truck loads of sand to stabilize the rubble.

In the meantime, Gilpin's crew worked around the clock. They installed steel rods every 25 feet from one curb to the other, in many cases excavating fill they had placed just days earlier. They counteracted the sand's outward thrust by drawing the rods tight with turnbuckles. All told, about 9,000 feet of rod was used.

If this all was not enough work, Gilpin's men struggled for weeks to fill 16th Street. The grade was so steep, and the walls so deep, sluicing was not an option. Workmen finished the project one wheel barrow at time.

On Feb. 27, Gilpin completed filling the downtown streets – a mere 58 days since starting the project. This enterprise marked the climax of Astoria's commercial reconstruction. The newspaper called it "spectacular" and "a dramatic struggle."

The work of John Slotte and then Soleim & Gustafson, who poured the sidewalks and paved the streets, was overshadowed by the sheer magnitude of Gilpin's achievement. However, we would be a much poorer city without the vision, fortitude and leadership of everyone involved in the reconstruction of Astoria.

Their accomplishment remains an inspiration today.

John E. Goodenberger is a historic building consultant who lives in Astoria.

Archive: Structure is not 'chairwall'

Continued from Page 1

Goodenberger read every newspaper from 1923 heading into 1924 looking for articles about the system and found that Portland's consulting engineer had patented it to use there, specifically in waterfront cities, but architectural and engineering historians have not been able to find chairwall existing anywhere but in Astoria.

During the archiving process, however, it became apparent that the formation at the intermodal center site is not chairwall. It doesn't even really have a name. "It is simply a straight wall with fill in between."

The city decided to nominate public sites with both sets of structures to the national historic register and leave it at that. The chairwall sites between 16th and 17th streets on Commercial Street, near the Columbia River Maritime Museum, and under one sidewalk surrounding tidal rock are both open to view, and the unnamed style at the intermodal center exists under the other sidewalk, as well as at the corner of 13th and Exchange streets.

THE DAILY AST

129th YEAR, No. 144 FRIDAY, JANUARY 18, 2002

Photographer records history with piece of history

Photos of unique architecture will last for a century

By BEN GILBERT
The Daily Astorian

With Goliath's tripod, a small stepladder and a camera that is itself historic, photographer Jim Stoffer has recorded a segment of Astoria's architectural history not normally noticed – before progress wipes it out from view completely.

Before the Sunset Empire Transportation District could fill in the depressed parking lot between Ninth and 10th streets on Marine Drive for the planned Intermodal Center (bus, shuttle, trolley and transfer station), National Park Service inspectors concerned about the National Register Historic District determined that the structure holding up the sidewalks above the perimeter of the lot was a rare engineering form called "chairwall," possibly unique to Astoria.

They've required the site to be extensively and meticulously documented under a special federal archiving program, the Historic American Building Survey and the Historic American Engineering Record.

They were slightly wrong. The structure at the intermodal center site is not chairwall – and though a unique display of 1915 street construction, it doesn't even have a name. Chairwall is a truely rare 1923 structure underneath most of the rest of the downtown streets, but not at the intermodal center location. That discovery was made too late in the process, and the archiving will continue.

Many angles

For the HABS/HAER program, Stoffer climbs the stepladder, perches near the top of the 12-foot tripod and throws a shawl over the top of his head to block out all the light from the oversized negative, like a turn-of-the-century portraitist. He looks directly through the lens to frame his shot, but it appears upside down and backwards, requiring an imagination of mirrors and headstands to get the composition right.

'We have to have this all done and archived and in their hands before they can

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>
> *— Jim Stoffer*
> photographer

While a chance to exhibit some of the greatest skill and artistry, the compositions strictly cannot be artistic or stylized; the photos must be meticulously accurate, down to the detail and perspective of the farthest-off landmark. For the historical record, Stoffer has to include not only the architectural phenomenon itself, but position the site in the city, including in the frame: the Astoria Column, John Jacob Astor House and "things that 100 years from now, people could come back and correlate with this site."

He then follows up with a plethora of detail and close-up shots from various angles.

His view camera is itself a historical relic, a 5-by-7 inch Deardorff Co. African mahogany camera designed in the first half of the last century, but it still takes the best pictures for long lasting archives. To meet federal standards, the negatives alone must be between 4-by-4 and 8-by-10 inches and print in black and white.

While SETD Chief Executive Officer Cindy Howe holds the prints in her hands she has to wear white gloves to keep the prints from dissolving, but if left untouched the prints will remain stable for more than a century. Historic buildings consultant John Goodenberger will send copies to the Clatsop County and Oregon historical societies, the University of Oregon library and possibly the Library of Congress, depending on how rare the site turns out to be.

"This ... is the first stage in construction," Stoffer said. "We have to have this all done and archived and in their hands before they can let the first hammer fall."

Howe said the main obstacle to beginning the intermodal project has not been Stoffer, but late paperwork and documentation from subcontractors to the Oregon Department of Transportation. She expects to begin the design phase Thursday and to start soliciting bids to fill the lot and work with the lot's partial owner, George Fraser, to temporarily relocate the cars that park there. Howe is shooting to have the lot filled by May and work done on the building, including office space, restrooms, windows, ticket sales and waiting area, with buses pulling in and out, by September at the earliest.

Pull up a chair

The city of Astoria and SETD have not only been required to archive the site, but to mitigate the effects of filling it with concrete by nominating two other chairwall sites to the national register. Chairwall is a system built in 1923, after the great Astoria fire destroyed all of downtown, that supports the city streets and sidewalks while leaving an accessible pocket encased in concrete for utilities. In a profile from below street level, it looks like a chair with the tip of the back up against the lip of the sidewalk.

"If you think about the mindset of downtown in 1923, the downtown has just been burned down by fire. They're scared to death of it burning down again," said Goodenberger. "So this was a protection method. The gas lines were more protected."

It also allowed most of the buildings downtown to be constructed independently of the streets, rather than filling in entire city blocks.

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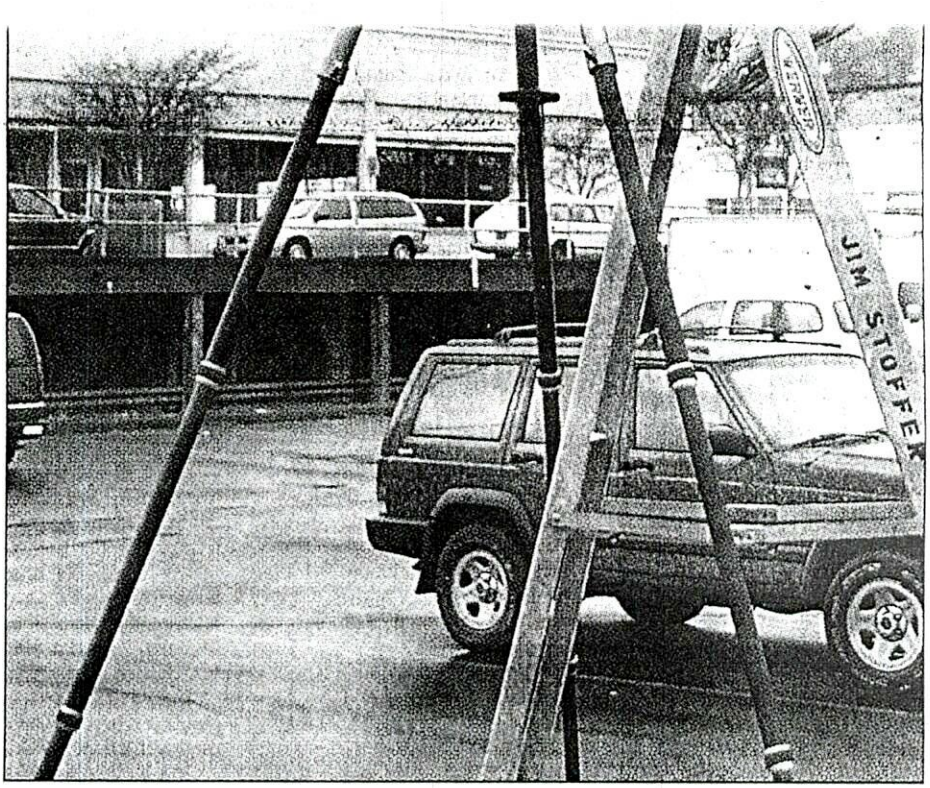

LORI ASSA — The Daily Astorian

Photographer Jim Stoffer sets up his camera on a 12-foot tripod to photograph what was thought to be a "chairwall" surrounding the parking lot between Ninth and 10th streets on the north side of Marine Drive.

Stoffer holds his 5-by-7 inch Deardorff Co. African mahogany camera he uses to make black-and-white prints to document historic construction in downtown Astoria.

INDEX OF PHOTOGRAPHS

Astoria Downtown Below-Grade Retaining Walls
Astoria, Clatsop County, Oregon
January, 2002
Photographer: Jim Stoffer
Location of negative: Clatsop County Historical Society
1618 Exchange Street
Astoria, Oregon 97103

1 of 14 Looking east on Marine Drive, toward 10th Street, below-grade lot to left.

2 of 14 Looking NE, toward Astor Street and 10th Street, across below-grade lot, Columbia River in background.

3 of 14 Looking west toward 9th Street, across below-grade lot, Astoria Bottling Works to left.

4 of 14 Looking SW, toward Marine Drive, across below-grade lot, Astoria Bottling Works to right.

5 of 14 Looking NE, toward Astor Street and 10th Street, below-grade lot in foreground, Columbia River in background.

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7 of 14 Looking SE, toward Marine Drive and 10th Street, below-grade lot in foreground, Astoria Bottling Works to right.

8 of 14 Looking east, toward 10th Street, ramp to below-grade lot in foreground, Astoria Bottling Works to right.

9 of 14 Looking SE, 10th Street sidewalk supported by concrete piers and joists, below-grade lot to right.

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11 of 14 Looking SW, Marine Drive sidewalk supported by concrete piers and joists, retaining wall visible below, Astoria Bottling Works to right.

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13 of 14 Looking south, below Marine Drive sidewalk, concrete piers in foreground, retaining wall with original wood formwork in background.

14 of 14 Looking south, below Marine Drive sidewalk, detail of retaining wall with original wood formwork.